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EXAMINER	
KOSSON, ROSANNE	

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1652	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/577,393	ISAMAT RIVIERE, MARCOS	
	Examiner	Art Unit	
	Rosanne Kosson	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *8-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 11-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 October 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/23/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group 1, claims 1-7 and 11-15, drawn to a method of identifying biological species or subspecies in a biological sample by performing PCR with primers that hybridize to regions 1130-1191 and 1453-1473 of the human beta-actin gene, in the reply filed on June 17, 2008 is acknowledged. Claims 8-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to non-elected inventions, there being no allowable generic or linking claim. Claim 11 has been amended. No claims have been canceled or added. Accordingly, claims 1-7 and 11-15 are examined on the merits herewith to the extent that they read on the elected invention.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because no declaration has been filed, and a U.S. declaration is required. Only the declaration in the corresponding PCT application, Application No. PCT/ES2003/000547 has been filed. Appropriate correction is required.

Claim Objections

Claims 1-7 and 11-15 are objected to because of the following informalities. The claims should be written in standard U.S. English and in compliance with U.S. patent practice. The independent claims should be amended to recite "A method for …" The dependent claims should be amended to recite "The method of claim 1 …" Also, the claims recite the "cytoplasmatic" beta-actin gene, although Applicant appears to mean the "cytoplasmic" beta-

actin gene. Additionally, claim 3 recites that gene segments are amplified in a PCR technique using DNA sequences. In PCR, primers or oligonucleotides are used, not DNA sequences, which may be of any length. Appropriate correction is required.

Claim Rejections - 35 USC § 112, first paragraph

and Objections to the Specification and Sequence Listing

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5-7 and 11 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The reference sequence for Applicant's beta-actin gene, GenBank Record No. M10277, is critical or essential to the practice of the invention, but it is not included in the disclosure. Thus, the claims are not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

The recitation of a GenBank record no. is considered to be an implied incorporation by reference. Thus, the application may be amended to add this sequence, with a SEQ ID NO:, to the specification and Sequence Listing. The claims should be amended to refer to this reference sequence by SEQ ID NO:. For example, claim 5 may recite that the region that is amplified is the region between nucleotide positions 1130-1473 of SEQ ID NO:9. Claim 7 may recite that the primers hybridize to regions between particular nucleotide positions of SEQ ID NO:9. Appropriate correction is required.

Further, a GenBank record number (or accession number) can have more than one GI number associated with it, as different versions of a sequence, indicated by numbers following a decimal point in the GI number. Each GI number represents a sequence and has a date

associated with it. The different versions arise as GenBank allows modifications to the sequence. Thus, Applicant should indicate the specific GI number (sequence version) that is being added to the application and should supply evidence showing that the version of the sequence that is being added antedates the priority date. The evidence would be, for example, a printout of that GenBank entry with that particular GI. If there is only one GI number, only one version of the sequence, Applicant may simply state that information.

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 and 11-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite the step of amplifying segments of the beta-actin gene by PCR or "an equivalent technique." The term "equivalent technique" is not defined in the specification and no equivalent techniques are named or described. Thus, this term renders the claims indefinite. Appropriate correction is required. For example, this term may be deleted.

Also, claim 1 is missing an essential step, the step where the biological species is identified. Step C merely recites identification of the amplified segment. The claim needs a step that links analysis of the amplified segment with the identification of the biological species in the sample. Step C should be amended accordingly. A fourth step may also be added.

Claim 1 is indefinite in the recitation of “comparison of the resulting sequence with the specific sequence of each species or subspecies present on a computer database,” because it is unclear as to what is used for the comparison. What is a “specific sequence of each species

or subspecies?" What is encompassed by the term "specific sequence?" This term does not convey that the sequences of beta-actin genes from different organisms are compared. Appropriate correction is required.

In claim 3, the term “DNA sequences with high evolutionary conservation between species and subspecies” is indefinite. This limitation defines the structure of the primers, but DNA sequences are used in the claim. A particular primer may or may not meet this limitation, because “a sequence with high evolutionary conservation between species and subspecies" could be different for different organisms and depends upon which species/subspecies are being tested. What is highly conserved among species (animals) A, B C may not be highly conserved among species (animals) A, D, E, and F. Also, the term “high” (in the sense of highly evolutionarily conserved) is a relative term which renders the claim indefinite. The term "is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 4 recites that "the segments to be amplified are those which lie between the 3' sequence of the upstream exon and the 5' sequence of the downstream exon comprising the whole intronic sequence …" First, which intron of beta-actin is meant? Which upstream exon and which downstream exon are meant? GenBank Record No. M10277 shows that beta-actin has five introns and five exons. Also, Applicant appears to mean that the intron lies between the 3' end of the upstream exon and the 5' end of the downstream exon, but the meaning is not certain, rendering the claim unclear. Appropriate correction is required.

In claim 6, the limitation "hybridise with the most highly conserved nucleotide regions of the cytoplasmatic beta-actin gene" is indefinite. Similarly to claim 3, what is encompassed by the term "most highly conserved nucleotide regions" of the beta-actin gene? The term is a

relative term, it can mean different things to different people, and it is a variable with respect to beta-actin genes. For example, among the beta-actin genes from five different organisms, A, B, C, D and E, different regions may be highly conserved, depending on which organisms are compared. Comparing organisms A, B and C may have a different result than comparing organisms B, C, D and E.

Claims 5 and 7 refer to Accession No. M10277 for the beta-actin gene and protein, but the claims do not recite which database this record is in, rendering the claims unclear. The claims should be amended to recite that they refer to GenBank Record No. M10277. Further, the nucleotide position numbers referred to are indefinite, because a deposited sequence can be changed and updated over time and still maintain the same accession number. Definite position numbers and appropriate correction are required. As discussed above, Applicant may amend the Sequence Listing and the claims by adding this beta-actin gene to the Sequence Listing and by adding a reference SEQ ID NO: to the claims. For example, claim 5 may recite that the region that is amplified is the region between nucleotide positions 1130-1473 of SEQ ID NO:9.

Moreover, as written, claims 5-7 and 11 require amplification of regions which are found in the human beta-actin gene. The claims are confusing, because the claimed method is meant to amplify sections of a beta-actin gene from any organism. Therefore, it is unclear how this goal can be accomplished by amplifying parts of the human gene. The claims should recite that the regions to be amplified are those which **correspond** to specifically named positions in the human beta-actin gene.

Claim 12 is confusing, because it does not appear to limit further claim 1. The samples in claim 1 are biological material. Clarification and appropriate correction are required. For example, claim 12 may be canceled.

In claim 14, what is used for the comparison? The term "amplified segments are compared with the sequences of these same gene regions of species included on a computer database" is indefinite because one cannot determined what is encompassed by the term "same gene regions of species …" This limitation does not convey that a comparison is being made with other beta-actin gene sequences or with regions of beta-actin gene sequences that correspond to what is amplified, in particular with corresponding regions of beta-actin genes from organisms (or animals or species) that one wishes to identify. Appropriate correction is required.

Claim 15 provides for the use of beta-actin DNA to identify the source of the DNA (the organism from which the DNA is derived), but, because the claim does not set forth any steps involved in the method/process, it is unclear what method/process Applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 15 is also rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966). Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over du Breuil et al. ("Quantitation of beta-actin-specific mRNA transcripts using xeno-competitive PCR," Genome Res 3:57-59, 1993) in view of Sambrook et al. (Molecular Cloning, A Laboratory Manual, 2d ed., Cold Spring Harbor Laboratory Press, Plainview, New York, 1989, chap. 6, pp. 30-33, and chap. 14, pp. 5, 10 and 11).

du Breuil et al. disclose a method of identifying one or more biological species, including human (*Homo sapiens*), by extracting RNA from animal samples, making DNA from the RNA, extracting the DNA (cDNA) and performing PCR. The PCR primers used are those that bind to the most conserved regions in human and rat beta-actin, such as regions in exon 3. The amplified DNA segments are compared in size to standard fragments on a gel (2% agarose gel), and the resulting sequences are compared to each other and to the known DNA sequences for each species tested. See pp. 57 and 58, left col. The divergent regions in the beta-actin gene are amplified (see Fig. 1).

du Breuil et al. do not disclose that the amplified DNA fragments are compared to the sequences of the same regions of species included in a computer database. Nevertheless, it would have been obvious to one of ordinary skill in the art at the time of the invention to compare the amplified fragments to sequence information in a database, because the artisan of ordinary skill would have known that the DNA in an amplified fragment could have been extracted from a gel and sequenced and that a comparison of the two sequences could have been used either to identify mutations in the sample DNA or to identify the source of the DNA in the sample when the DNA is from an unknown animal (see Sambrook et al., chap. 6, pp. 30-33, and chap. 14, pp. 5, 10 and 11). Storing DNA sequence information in databases was conventional in the art at the time of the invention.

Regarding claim 4, du Breuil et al. do not disclose that the amplified region is an intron. But, it would have been obvious to one of ordinary skill in the art at the time of the invention to amplify an intron, instead of an exon, because the artisan of ordinary skill would have known that, in amplifying a region containing an intron, the resulting PCR products would serve to identify the presence of genomic DNA in a sample. The artisan of ordinary skill would have known that this information is beneficial in identifying contaminating DNA in a sample, e.g., in a sample containing both genomic and cDNA, such as recombinant host cells. Identifying the presence and/or amount of genomic DNA provides an indication of the purity of the recombinant product. As both human and rat (or other rodent) host cell lines are routinely used, one of ordinary skill in the art would have known that it is important to be able to identify contaminating DNA from both rat and human sources.

In view of the foregoing, a holding of obviousness is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosanne Kosson whose telephone number is (571)272-2923. The examiner can normally be reached on Monday-Friday, 8:30-6:00, alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nashaat Nashed can be reached on 571-272-0934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 1652

rk/2009-01-08

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